

Introducing GLAMEPSv2

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for the GLAMEPS development team

ALADIN-HIRLAM

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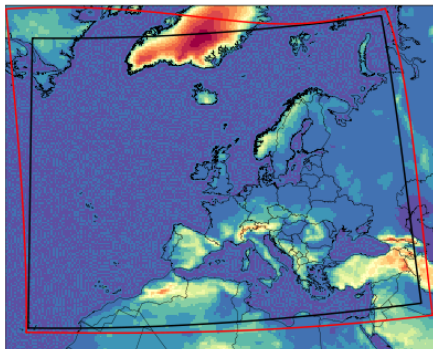
- 1 Introduction
- 2 Domains & models
- 3 Suite set-up
- 4 Timing
- 5 First results
- 6 Conclusions

Current version (v1):

- run at 06 and 18 to +54h
- $(12+1) \times \text{ALARO} + (12+1) \times \text{HIRLAM_K} + (12+1) \times \text{HIRLAM_S} + \text{ECDET} + 14 \times \text{ECEPS} = 54$
- Alaro: 629x529, 11.8km, L37
- Hirlam: 646x492, .10°, L40

GLAMEPSv2: domain

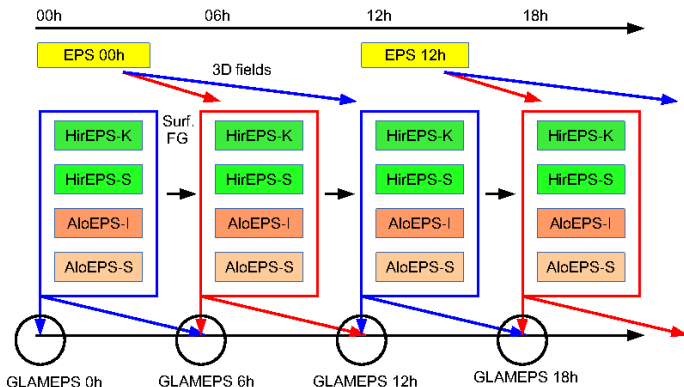
- domain: quasi unchanged
- Alaro: 853x709, 8.9km, L40
- Hirlam: 870x660, .075°, L40



- Run at 00, 06, 12, 18 to +54h (+60)
- Two versions of Hirlam (Straco, Kain-Fritsch) , two versions of Alaro (Isba, Surfex). Each has 12 perturbed members plus control.
- Half of the members are lagged by 6h. Controls are run every 6h.
- To combine +54h forecasts, we have to run all members to +60. In fact, we now run to **+72** as back-up procedure.
- $2 \times (6+1) \times \text{ALARO_S} + 2 \times (6+1) \times \text{ALARO_I} + 2 \times (6+1) \times \text{HIRLAM_K} + 2 \times (6+1) \times \text{HIRLAM_S} = 56$ (52)
- Include 4 control runs from lagged ensemble? You would then have 8 "controls" for 56 members in total.

v2 basics

At every forecast time, you combine the 28 new members with the members calculated 6h earlier.



ALARO:

- Harmonie 37h1.2 (adapted to fit in GLAMEPS SMS suite).
- ISBA and SURFEX schemes.
- Every member has separate surface assimilation cycle.

HIRLAM:

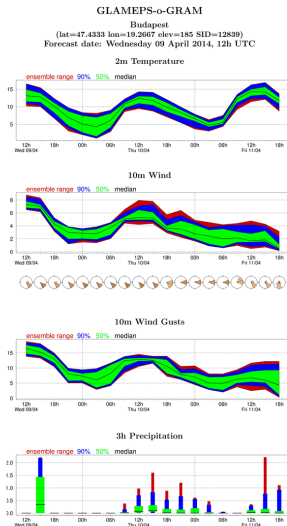
- Two schemes for cloud parametrisation.
- Stochastic physics.
- Perturbed surface obs.
- Surface assimilation.
- 3d-Var in control members.

Daily table extraction (SQLite)

- As part of the run, all fields are interpolated to a (large) set of station locations.
- Tables are stored in SQLite format.
- Can be used directly in HARP verification.
- Also to be used for calibration and GLAMEPS-o-grams.

GLAMEPS-o-grams revisited

- No more separate interpolation: use the same SQLite tables extracted for calibration/verification.
- Basic elevation correction using average lapse rate.
- Adding locations on request is easy, especially if they are already in the list of WMO stations.
- Contact Alex Deckmyn or Kai Sattler to add locations.



GLAMEPSv2 was run in November / December in catch-up mode (shorter forecast range). After a disruption it was re-started and in early March it caught up. It is now running in parallel to v1. Graphical data is available from

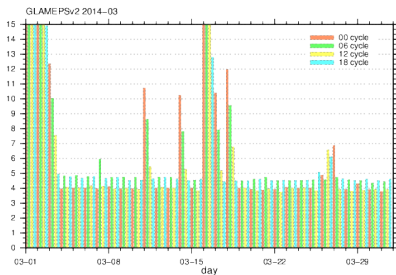
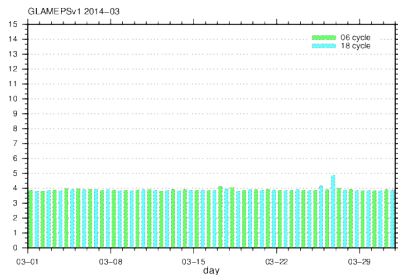
<https://hirlam.org/portal/GLAMEPS/test>

and quite comprehensive documentation can be found at

<https://hirlam.org/trac/wiki/Glamepsv2ProductionUserInfo>

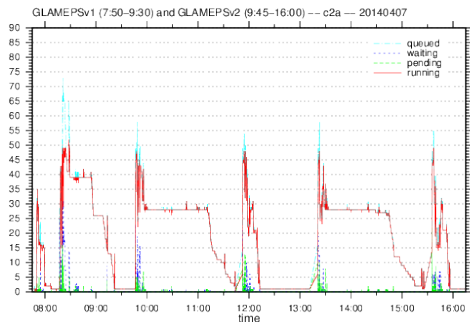
timing 1

Both are available about 4h after nominal analysis time, but v2 was still in catch-up mode the first days of March 2014.



06 and 18 slightly later because they have to wait for EPS LBC's.

timing details: v1 and v2 runs on 20140407

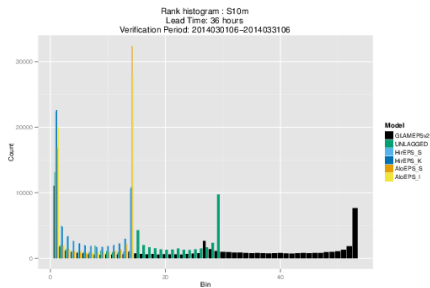
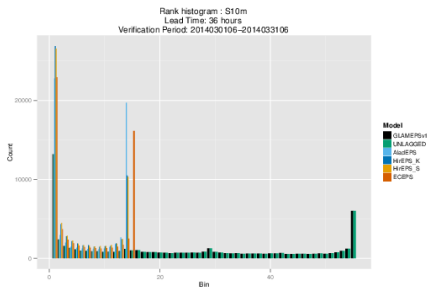


On 7 April, c2b was switched off. So GLAMEPSv1 and v2 are currently both running on c2a. As v1 is still considered the main result, v2 is currently a bit delayed so as not to interfere with v1.

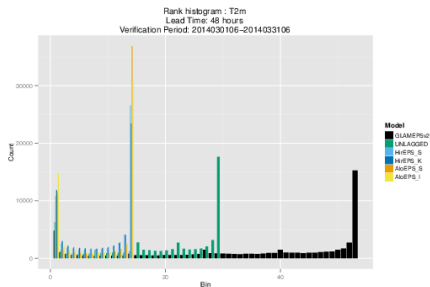
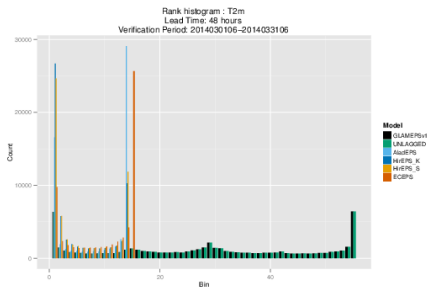
During the HARP working week (March) HARP was prepared for dealing with GLAMEPSv2. First results are now available.

Next slides will show some scores for March 2014, 06h runs of v1 and v2. Just produced, no time yet to study them seriously.

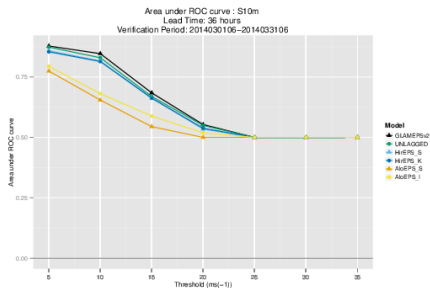
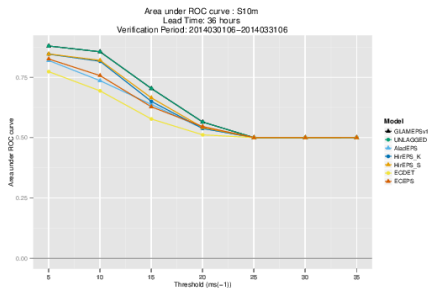
Rank Histograms: wind speed



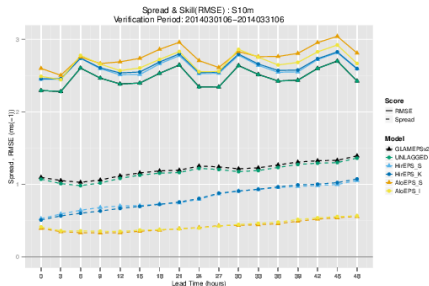
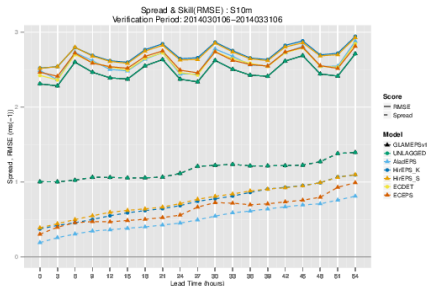
Rank Histograms: T2m



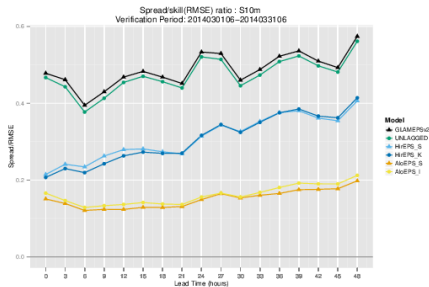
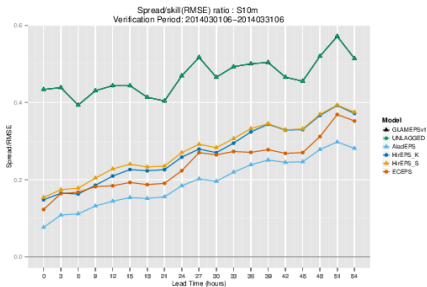
Area under ROC curve: S10m



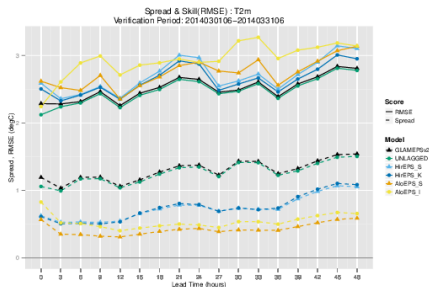
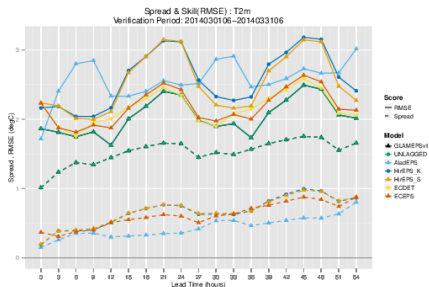
Spread/Skill S10m



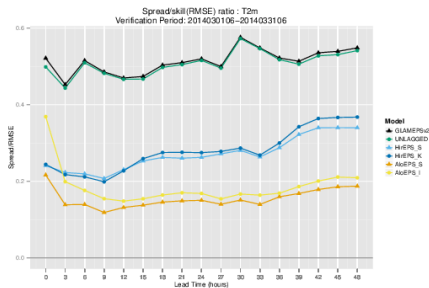
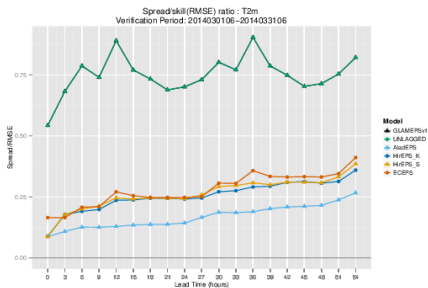
Spread/Skill ratio S10m



Spread/Skill T2m



Spread/Skill ratio T2m



- GLAMEPSv2 is running in parallel to v1
- v2 runs 4 times per day
- ECMWF members have been replaced by more ALARO members
- Validation has just started
- Output is available for testing

- validation (HARP)
- porting to Cray (only planned for v2)
- calibration
- CAPE singular vectors (Sibbo van der Veen)
- combination with LAEF